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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,410	02/13/2001	Urbain Alfred von der Embse		1502

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Urbain Alfred von der Embse
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EXAMINER

PERILLA, JASON M

ART UNIT PAPER NUMBER

2634

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/846,410

Applicant(s)VON DER EMBSE, URBAIN-
ALFRED**Examiner**

Jason M Perilla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-4 are pending in the instant application.
2. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and **generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided**. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. **It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.**

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Content and Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),

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and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention

described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

5. Claims 1-4 are objected to because of the following informalities:

Regarding claim 1, the significance of the unit "j", found in line 21, should be defined in the claim.

Regarding claim 1, it is suggested that the forth and fifth paragraphs are combined because they contain substantially identical limitations.

Regarding claim 1, the claim is objected to because the claim language is unclear regarding the number of data signals with are to be simultaneously transmitted. While the claim provides for multiple data rate users, "multiple data rate users" does not clearly define between a single or a plurality of data signals.

Regarding claim 3, paragraphs 2-5 provide substantially identical limitations. It is unclear if the Applicant indeed intended to present four independent means or one means which may provide for a plurality of functions.

Regarding claim 4, the limitations of paragraph 3 are encompassed by paragraph 5.

Regarding claims 1-4, the claims are replete with phrases which are lacking antecedent basis. For instance, in claim 1, the phrases "the real component", "the imaginary component", "the same CDMA frequency band", and "the cosine and sine DFT code vectors" are lacking antecedent basis, and in claim 2, the phrases "the complex Walsh", "the complex Walsh orthogonal", and "the complex discrete Fourier transform" are lacking antecedent basis. Claims 3 and 4 also contain phrases which lack antecedent basis in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

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8. **Regarding claims 1-4, the claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device.** The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited. For instance, in reference to claim 1, paragraph 4, it is noted by the Examiner that a means having the property of providing a means with a means to implement a function is not a proper claim structure.

9. The term "arbitrary angle rotation" in claim 1, line 10, is a relative term which renders the claim indefinite. The term "arbitrary" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

10. The term "computationally efficient algorithm" in claim 1, lines 17 and 19, is a relative term which renders the claim indefinite. The term "efficient" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

11. The term "greater flexibility" in claim 2, line 11, is a relative term which renders the claim indefinite. The term "flexibility" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

12. The term "greater flexibility" in claim 3, line 4, is a relative term which renders the claim indefinite. The term "flexibility" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

13. The term "unconstrained flexibility" in claim 4, is a relative term which renders the claim indefinite. The term "flexibility" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al (US 6674712; hereafter "Yang") in view of Honkasalo (US 6317413).

Regarding claim 1, Yang discloses providing a complex Walsh orthogonal code for use over a CDMA frequency band (abstract) with values $\pm 1 \pm j$ having the imaginary component equal to a reordering of the real Walsh orthogonal code (col. 6, lines 14-17 and 28-32). Yang does not explicitly disclose (a) providing complex Walsh orthogonal CDMA codes which reduce to the real Walsh orthogonal CDMA codes upon removal of the imaginary code components or (b) providing a means to encode and decode multiple data rate users with complex Walsh orthogonal codes for simultaneous

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transmission over the same CDMA frequency band. However, according to the Applicant's admitted prior art (pg. 14, lines 463-466), and as well known to those skilled in the art, the limitations of (a) are inherent. That is, a complex Walsh code reduces to a real Walsh code upon the removal of the complex components. Further, regarding limitation (b) Honkasalo discloses providing a means to encode and decode multiple data rate users with Walsh orthogonal codes for simultaneous transmission over the same CDMA frequency band (abstract; col. 3, lines 30-37). Honkasalo discloses in figure 1 a Walsh encoder or spreader (col. 5, lines 30-33; refs. 122 and 124) and discloses in figure 2 a Walsh decoder or despreader by a rake receiver (ref. 206 taking Walsh code input WN_{xp}). One skilled in the art is familiar with the fact that a CDMA transmission system is, definitively, one that transmits multiple data signals over the same frequency band by spreading the various data signals to make them orthogonal or non-interfering and Honkasalo teaches such properties of a CDMA system (col. 1, lines 19-24). Further, Honkasalo teaches that by the use of variable length Walsh codes, a data rate of individual data signals transmitted may be variable (col. 3, lines 30-37) and that higher data rate CDMA systems are desirable (col. 2, lines 6-35). According to tables 1 and 2 (cols. 6 and 7, respectively) variable data rates are accommodated by variable length Walsh codes. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the variable data rate CDMA transmission system of Honkasalo with the complex Walsh codes of Yang because the data rate could be appropriately adjusted to increase the total bandwidth of the system as desired. The limitations including the terms

"computationally efficient", and "within arbitrary angle rotations" are indefinite and can not be considered.

It is noted by the Examiner that the rejection of claim 1 is made according to the Examiner's best understanding of the claim as it was originally filed.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art of record not relied upon above is cited to further show the state of the art with respect to complex Walsh codes.

U.S. Pat. No. 6396804 to Odenwalder.

U.S. Pat. No. 6389138 to Li et al.

U.S. Pat. No. 5956345 to Allpress et al.

U.S. Pat. No. 5862453 to Love et al.

U.S. Pat. No. 5805567 to Ramesh.

U.S. Pat. No. 5311176 to Gurney.

U.S. Pat. No. 5943361 to Gilhousen et al.

U.S. Pat. No. 5946344 to Warren et al.

U.S. Pat. No. 6185246 to Gilhousen.

U.S. Pat. No. 6167079 to Kinnunen et al.

U.S. Pat. No. 6157611 to Shanbhag.

U.S. Pat. No. 6088347 to Minn et al.

U.S. Pat. No. 5442625 to Gitlin et al.

U.S. Pat. Pub. No. 20020126741 to Baum et al.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason M. Perilla
October 5, 2004

jmp



CHIEH M. FAN
PRIMARY EXAMINER